INSIDE AGRONOMY

ISSUE 5 - NOVEMBER 25, 2024

PURDUE UNIVERSITY | Agronomy

THUMBS UP!

Cheryl Long

A heartfelt thank-you to Cheryl (Agronomy Business Office) for her unwavering dedication and outstanding contributions to our department. Cheryl consistently goes above and beyond to meet the needs of faculty, staff and students within Agronomy, always ensuring each person receives timely support and resources. Cheryl's impact extends well beyond her formal responsibilities. She's quick to assist those outside her immediate purview, often taking extra steps to guide individuals toward the right resources and provide accurate, relevant information. With an impressive wealth of knowledge and a genuine care for her colleagues, Cheryl exemplifies what it means to be a team player. Her attention to detail and commitment to follow-through are second to none, making her an invaluable pillar within our department. We are deeply grateful for everything she does, and we're fortunate to have her as part of our team. Thank you, Cheryl, for your incredible dedication and tireless work — you make a real difference every day! — Lexie Wilson (Agronomy)

AGRONOMY AMBASSADORS 2024

3rd row: Corban, Ahren, Josh, Logan, Jonathan, Jeremy,
2nd row: Benton, Raelyn, Allaina, Emily, Kaia, Jason, Camden,
Front row: Amanda, Kyra, Kate, Hannah, Ava, Shayla, Shelby
Not pictured: Ruby, Maddie

UPCOMING

November
27-30 - Thanksgiving Break

December
2 - Dr. Hongyan Zhu - University of Kentucky
7 - Classes end for the semester
9 - 14 - Finals Week
16 - January 12 - Winter Break for Students

January
13 - Spring semester begins

Share Your News!

Email your news, photos, and articles to Stephanie Orem at sorem@purdue.edu to be shared in the next issue of Inside Agronomy!

Erick Daniel Oliva Fuentes, a master's student in Dr. Dan Quinn's lab, showcased his research on short-stature corn at the Tri-Societies Meeting in San Antonio. His outstanding presentation earned him second place in the Master's Poster Competition within the C-3 division of the Crop Science Society of America (CSSA). Congratulations to Erick on this well-deserved achievement!

Submitted by Narciso Zapata Branda

CONGRATULATIONS TO THE CROPS JUDGING TEAM ON A SUCCESSFUL WEEK IN SAN ANTONIO

Submitted by Sherry Fulk-Bringman

2024 SASES National Meeting - San Antonio

Pedology Team
Emily, Jackson and Kyra

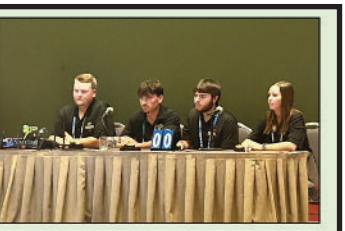
Round Table discussion with tri society presidents

The Agronomy members were able to attend the Purdue Reception and interact with Alumni and past student friends.

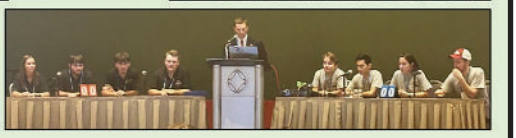
Ruby and Kyra presenting Internship Posters

SASES Quiz Bowl
San Antonio

Purdue
Josh, Jason
Aleah & Jackson
Reserve Champs



6 rounds won and the championship was determined by a tie breaking question

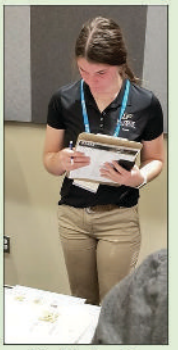


Jason tied for 3rd place Individual

SASES Crops Contest San Antonio

Purdue 4th place Team

Jason: Plant ID



Maddie: Seed ID
Overall: Tied for 24th Individual

Kate: lab practical 42nd individual overall

Josh: Seed ID
Overall: Tied for 10th Individual

Ruby out going SASES Secretary 2024

Incoming Vice President 2025

Congratulations to Sherry Fulk-Bringman and the Agronomy Club for once again being awarded Top Option Club for the College of Agriculture!

Hanna and Maddie accepted for the Agronomy Club - The Outstanding Option Club for the College of Agriculture

Agronomy Club's 3 teams:
Bale Bandits
Kernel Krushers
Hay Hustlers

College of Ag Hog Roast "Olympics"

Sorghum Improvement Program

The Sorghum Improvement Program at Purdue University's Agronomy Department focuses on enhancing the genetic potential of global sorghum yields.

Sorghum is a staple food crop for over 500 million people and an essential food security crop in the semi-arid tropics. Farmers in Africa value both the grain yield and stalk of the sorghum crop. The average global sorghum yield is around 2.5 tons per hectare, but in Africa it is only 1 ton per hectare.

Amare Hailessilase, a PhD student at Purdue University's Department of Agronomy, is conducting research with Professor Gebisa Ejeta mentorship. Their research has found that sorghum hybrids developed from Ethiopian landraces have a grain yield potential ranging from 2.3 to 9.2 tons per hectare, with over 101% heterosis advantage. This highlights the importance of incorporating traditional African sorghum landraces into sorghum hybrid breeding programs.

Meet Pavani Ganju, the new Lab Manager of Dr. Yichao Rui's Agroecology Lab!

Pavani earned her bachelor's degree in Plant Sciences from the University of California, Davis, and her master's degree in Botany from the University of Wisconsin–Madison. She brings extensive academic experience to her new role and is eager to contribute to a variety

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Congratulations to **Binod Gyawali** for successfully passing his Ph.D. Dissertation Defense!

Submitted by Sophia Qu

Below is an excerpt from an article shared by Dr. Roland Wilhelm for Inside Agronomy. Click the link to read the full article on phys.org

https://phys.org/news/2024-11-advancements-genomic-reveal-alternative-transcription.html

Advancements in genomic research reveal alternative transcription initiation sites in thousands of soybean genes

by Lindsey Berebitsky,Purdue University

Rosalind Franklin, James Watson and Francis Crick discovered the structure of DNA—that molecular blueprint for life—over 70 years ago. Today, scientists are still uncovering new ways to read it.

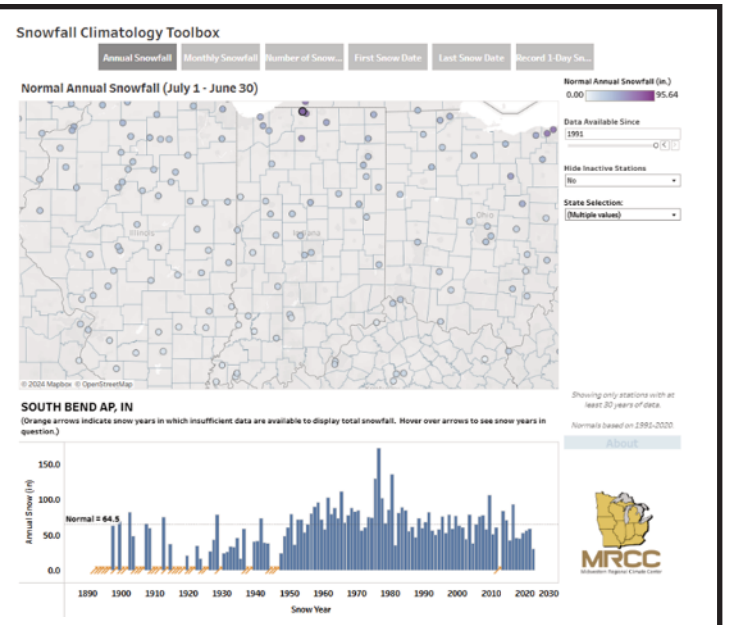
In 2010, Jianxin Ma, a professor of agronomy, and his collaborators built the first reference genome for soybeans on the widely studied Williams 82 variety. Thousands of scientists and plant breeders have since used that genome in their own research on the genetic makeup underlying various characteristics, such as seed protein and oil content, plant architecture and productivity, and disease resistance and abiotic stress tolerance in soybeans

Join the Fun and Brighten the Halls of Agronomy!

Exploring Snow Data with the MRCC's Snowfall Climatology Toolbox
By: Austin Pearson, Beth Hall, Melissa Widhalm

Say it isn't snow! We're rapidly approaching the snow season and, in some areas, have already seen the first snowflakes fly for the season. This may make you wonder when the earliest snowfall on record was recorded for your area. You're in luck! The Midwestern Regional Climate Center (MRCC) released their Snowfall Climatology Toolbox in 2022, which may be used to answer several of your burning seasonal snowfall questions. These questions include: How much annual or monthly snowfall does my area typically receive? On average, how many days per year does my location receive at least 1 inch of snow? What is the average date of first or last snowfall of the season for my location? What is the greatest amount of snow that fell at a location in a single day? The MRCC updates data for each snow year, spanning from July 1st-June 30th, annually to be sure users have the most current data available.

The Snowfall Climatology Toolbox uses the 1991-2020 climate normal for snowfall across the United States (Figure). It is important to note that not every weather station will be available since the MRCC places stringent criteria for missing or incomplete data. By zooming into Indiana, it can be seen that heaviest normal snowfall totals are in northern Indiana. For instance, the South Bend Airport, located near Lake Michigan, normally receives 64.5 inches of snowfall a year; whereas, Mount Vernon, Indiana, normally receives 8.0 inches of snow in a given year. Users can click on the station of interest, which will populate the annual snowfall timeseries below the map. In the case of the South Bend Airport, 172.0 inches of snow fell in the 1977-1978 snow year. The orange arrows below each column within the time series indicate missing or incomplete data.



The Snowfall Climatology Toolbox for South Bend, IN, featuring a visualization of normal annual snowfall and a time series illustrating the annual snowfall accumulation.

Users can also find normal monthly snowfall amounts and identify months with the largest snowfall totals on record for the location of interest. In addition, users can determine the number of days snowfall occurred for the location. The South Bend Airport records an average of 43.3 days a year with snow greater than 0.1 inches, while Mount Vernon averages 5.1 days. The earliest first snowfall on record for South Bend was September 25, 1942 and 1994. The latest last snow date for Mount Vernon was April 26, 1910. Another cool feature of the tool is being able to see the record 1-day snowfall totals. The South Bend Airport measured its largest 1-day total of 26.0 inches on January 8, 2011 (8:00 AM January 7 – 8:00 AM January 8). As you can see, you can get buried (no pun intended) in these data for a while. Okay, maybe pun intended, so be sure to go to the store and get your bread and milk...

For questions about this tool or any of our other resources, please be sure to reach out to the MRCC.

SPRING 2025

Geospatial Informatics

Learn cutting-edge tools in GIS, Remote Sensing, and Digital Soil Mapping

Course #: AGRY 59800GI (3 credit hour) | **CRN #:** Lecture - 29998 / Lab - 29999

Lecture: TR 1:30-2:20pm, LILY G428 | **Lab:** R 2:30-4:20pm, LILY G428

Course Overview

This course delves into advanced topics in geospatial science, focusing on practical applications in soil, agriculture, and natural resource management. Students will learn state-of-the-art techniques in geographic information systems (GIS), remote sensing, and spatial modeling. The course aims to equip students with specialized skills relevant to sustainable soil management, precision agriculture, and environmental sustainability.

Topics Covered

- Emerging Remote Sensing Techniques
- Digital Elevation Model, Global Positioning System, Geodatabase
- Digital Soil Mapping
- Precision Agriculture and Site-Specific Management
- GIS-Based Decision Support System
- R, ESRI ArcGIS Pro, and ArcPy

Prerequisite: Any GIS and/or Remote Sensing course (e.g. FNR 210, ILS 250, ASM 540) **OR** relevant work experiences. Contact the instructor for further information.

Instructor: Dr. Sidd Paul, Assistant Professor of Geospatial Science (sspaul@purdue.edu)

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SPRING 2025

FUNDAMENTALS OF CROP MODELING

AGRY 598
CRN: 30396
Credits: 3

THEORY AND APPLICATIONS

DR. PRATISHTHA POUDEL

ASSISTANT PROFESSOR
AGROECOSYSTEMS MODELING

Learn the theory and applications of crop models including:
- Basic concepts behind crop models
- How to build a simple crop model
- Setting up and using existing crop models such as DSSAT or APSIM
- Calibration and parameter estimation
- Sensitivity analysis
- Making inferences from crop model results

No pre-requisites; Basic knowledge of plant growth and development, and R programming language are expected.

SEND ANY INQUIRIES TO PPOUDEL@PURDUE.EDU

COURSE WEBSITE: COMING SOON!

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